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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,219	02/24/2004	Toshihiko Uno	60188-775	8351
7590 07/22/2005 McDermott, Will & Emery 600 13th Street, N.W. Washington, DC 20005-3096			EXAMINER WILSON, ALLAN R	
			ART UNIT 2815	PAPER NUMBER

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No.	Applicant(s)	
	10/784,219	UNO, TOSHIHIKO	
	Examiner	Art Unit	
	Allan R. Wilson	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over 6,168,983 to Rumennik et al. in view of 6,072,216 to Williams et al. Rumennik teaches in figures 11a-e and text beginning at column 9, line 44 a method of forming a device comprising:

a first step of selectively implanting a substrate 121 of a first conductivity type (P-) with impurity ion of a second conductivity type (N) to form an extended drain region 123 of the second conductivity type in an upper portion of the substrate; and

a second step of forming a plurality of buried layers 150 (fig. 11e), each being an impurity layer of the first conductivity type (P), in the extended drain region so that the buried layers extend parallel to a substrate surface with an interval therebetween in a depth direction. Rumennik also teaches that the extended drain is formed to a depth of 5 – 15 μm (col 9, lines 56-58) and that the lowermost buried layers are formed first (col. 11, lines 13-18).

Rumennik teaches that the first implantation is performed at an energy of 100 – 150 keV rather than at the higher claimed energy of about 1.0 to about 3.0 MeV. Williams teaches in figures 8G-I implanting a buried layer 404 to form part of an extended drain 112 and that the buried layer 404 is implanted at an energy of 0.5 – 3.0 MeV (col. 8, lines 1-7). Rumennik and

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Williams are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to form the device of Rumennik with an energy as taught by Williams. The motivation for doing so, as is taught by Williams, is that formation of such a buried layer reduces the on-resistance of the device (col. 4; lines 1-5). Therefore, it would have been obvious to combine Rumennik and Williams to obtain the invention of claims 5-7.

Response to Arguments

Applicant's arguments filed 05/23/2005 have been fully considered but they are not persuasive. Applicant is silent concerning the rejection of **Rumennik** in view of Williams. Applicant refers to Applicant's admitted prior art ("APA") in view of Williams. To be complete, the Examiner is responding to a **Rumennik** in view of Williams.

The argument that "Williams is completely silent as to the implantation energy for an extended drain region. The disclosed implantation energy of Williams is directed to a buried layer, and is therefore, at best, attributable to the implantation energy for forming the buried layers" is not persuasive. Rumennik illustrates the extended drain region 123 and then forming a plurality of buried layers 150 (fig. 11e). Williams is used to disclose in the rejection "a buried layer 404 to form part of an extended drain 112 and that the buried layer 404 is implanted at an energy of 0.5 – 3.0 MeV (col. 8, lines 1-7)." Additionally, the rejection discloses "[t]he motivation for doing so, as is taught by Williams, is that formation of such a buried layer reduces the on-resistance of the device (col. 4, lines 1-5)." Therefore it would have be obvious to modify Rumennik in view of Williams to form the "buried layers" in the extended drain.

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Since all the elements of the claims have been cited by the rejection a *prima facie* case has been established and the rejection stands.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Note: The present application has been transferred to a different examiner.

Any inquiry concerning this communication or earlier communications from an examiner should be directed to Primary Examiner Allan Wilson whose telephone number is (571) 272-1738. Examiner Wilson can normally be reached 7:00-4:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allan R. Wilson
Primary Examiner
20 July 2005